

Remarks

Reconsideration of the application in view of the following remarks and allowance of all pending claims are respectfully requested. Claims 1-71 remain pending.

Double Patenting Rejection

In the Office Action, dated June 17, 2004, claim 1 was provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/618,332. Applicants respectfully submit that claim 1 of copending Application No. 09/618,332 was canceled in a Response to Office Action filed on May 25, 2004, and therefore, Applicants respectfully request withdrawal of the provisional non-statutory double patenting rejection of claim 1.

35 U.S.C. 102(b) Rejection

In the outstanding Office Action, claims 1-12, 17-35, 40-60, and 65-71 were rejected under 35 U.S.C. 102(b) as being anticipated by Nunnelley et al. (U.S. Patent No. 5,423,046; hereinafter, "Nunnelley"). Applicants respectfully traverse this rejection for the reasons stated below.

One aspect of Applicants' claimed invention is a method of managing the allocation of space on storage devices of a computing environment. As recited in independent claim 1, the method includes, for instance, allocating space on at least one storage device in proportion to at least one weight obtained for the at least one storage device, wherein the allocating is performed by a plurality of file systems of the computing environment. Thus, in Applicants' claimed invention, space is allocated on at least one storage device by a plurality of file systems. This aspect of Applicants' claimed invention, recited in claim 1, is very different from the teachings of Nunnelley.

The cited reference does not teach or suggest all of the elements of Applicants' claimed invention. For instance, Nunnelley does not teach or suggest Applicants' claimed element of

“allocating space on at least one storage device..., wherein the allocating is performed by a plurality of file systems of the computing environment.” There is no mention in Nunnelley of a plurality of file systems, as claimed by Applicants. As described in Applicants’ specification (e.g., page 2, lines 1-10) and known in the art (e.g., see www.webopedia.com/term/f/file_management_system.html), a file system manages operations relating to files. Applicants’ invention is directed, in one aspect, to the allocation of space on one or more storage devices by a plurality of file systems. In one embodiment, a plurality of file systems running on a plurality of nodes of a computing environment allocate space on one or more storage devices (see, e.g., FIG. 1, FIG. 2, and page 10, lines 1-18 of Applicants’ specification).

In contrast, Nunnelley describes allocation on multiple storage devices by one centralized allocation manager (104 in FIG. 4). The allocation manager performs allocations in response to storage write requests from computer systems attached to a data/command bus (col. 3, line 65 to col. 4, line 4 and col. 4, lines 14-16). There is only one allocation manager running on one node in Nunnelley (FIG. 4), and not a plurality of allocation managers. In Nunnelley, there are various managers, but only one performs allocations, the allocation manager. Specifically, Nunnelley describes the allocations from the allocation manager as lists of cluster numbers (col. 3, line 65 to col. 4, line 2). The power manager (106 in FIG. 4) of Nunnelley does not allocate space. Instead, the power manager of Nunnelley activates the required clusters (i.e. subsets of disk files in disk array 402 (col. 9, lines 52-54 and col. 3, lines 24-25)) using the lists of cluster numbers, so that the dataset of the write request can be stored (col. 4, lines 25-27). The access manager (108 in FIG. 4) of Nunnelley also does not allocate space; this access manager generates a cluster list to satisfy a read request (col. 4, lines 48-53). Reading data from the disk array involves locating the data in the disk array, not allocating space.


In other words, one difference between Applicants’ claimed invention and Nunnelley can be summarized as follows. In Nunnelley, a single, centralized allocation manager allocates space on storage devices on behalf of computer systems connected to the centralized allocation manager. This is very different from Applicants’ invention, wherein the function of allocating

space on one or more storage devices is performed by a plurality of allocators (i.e., a plurality of file systems of the computing environment that perform allocation). Thus, the function of allocating space is distributed (among a plurality of file systems) in Applicants' invention, whereas the function of allocating space is centralized (in a single allocation manager) in Nunnelley. Therefore, Applicants respectfully submit that Nunnelley fails to teach or even suggest a plurality of file systems allocating space on at least one storage device. Accordingly, since Nunnelley fails to teach or suggest all elements of Applicants' invention recited in claim 1, Applicants respectfully request withdrawal of the rejection of claim 1 as being anticipated by Nunnelley.

Applicants respectfully submit that independent claims 23, 24, 46, 47, 49, and 71 are patentable over Nunnelley for the same reasons as claim 1. Furthermore, because claims 2-12, 17-22, 25-35, 40-45, 48, 50-60, and 65-70 depend from the independent claims and recite further features of the present invention, Applicants respectfully submit that the dependent claims at issue also recite patentable subject matter over Nunnelley for the same the reasons discussed above. Therefore, allowance of claims 1-71 is respectfully solicited.

Should the Examiner wish to discuss this case with Applicants' attorney, please contact Applicants' representative at the number listed below.

Respectfully submitted,


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